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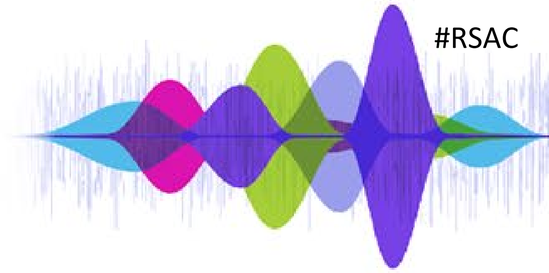
One Community.

SESSION ID: PART2-T01

The AI Imperative: Defining Zero Trust Security Strategies for a New Era

Deepen Desai
CSO, Zscaler



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The Latest AI Trends Revealed

Just released: 2025 AI Security Report

+3,465%

Increase in AI/ML transactions
in the Zscaler cloud year-over-year

536B

AI/ML transactions
between February–December 2024

Key AI/ML trends uncovered by ThreatLabz

Enterprise AI/ML transactions surpassed half a trillion

536B

Enterprise AI/ML tool usage surged 3,465%, 36x transactions year-over-year

36x

Enterprises **blocked** a significant portion of **AI/ML transactions**

60%

ChatGPT was the **most used and most blocked** AI application

#1

Nearly half of all AI/ML traffic came from the **United States**

46%

Top 3

Finance & Insurance, Manufacturing & Services drove the most AI/ML transactions

AI/ML apps most widely used by enterprises

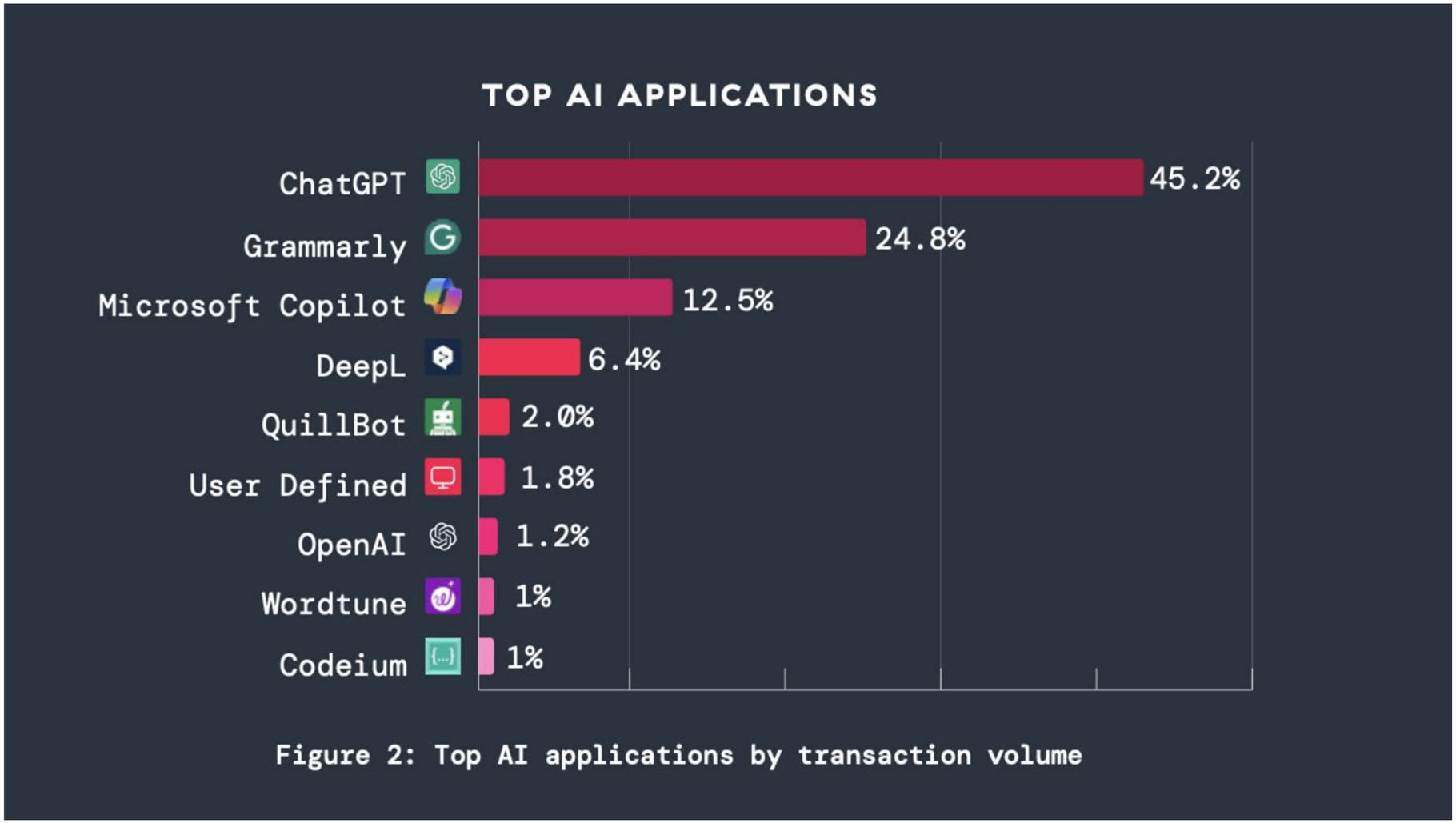

Figure 2: Top AI applications by transaction volume

Top application categories

1

60.4%

Productivity Assistants

ChatGPT, Microsoft Copilot, Perplexity

2

28.3%

Writing & Content Generation

Examples: Grammarly, QuillBot, Wordtune

3

5.8%

Language & Translation

Examples:Deept., LanguageTool

4

1.7%

Custom Apps

5

1.3%

Coding Assistants

Examples: Codeium, Claude

6

1.1%

Visual & Creative Tools

Examples: Loom, Synthesia

Enterprises send significant amounts of data to AI/ML apps

3624 TB

transferred by AI/ML apps

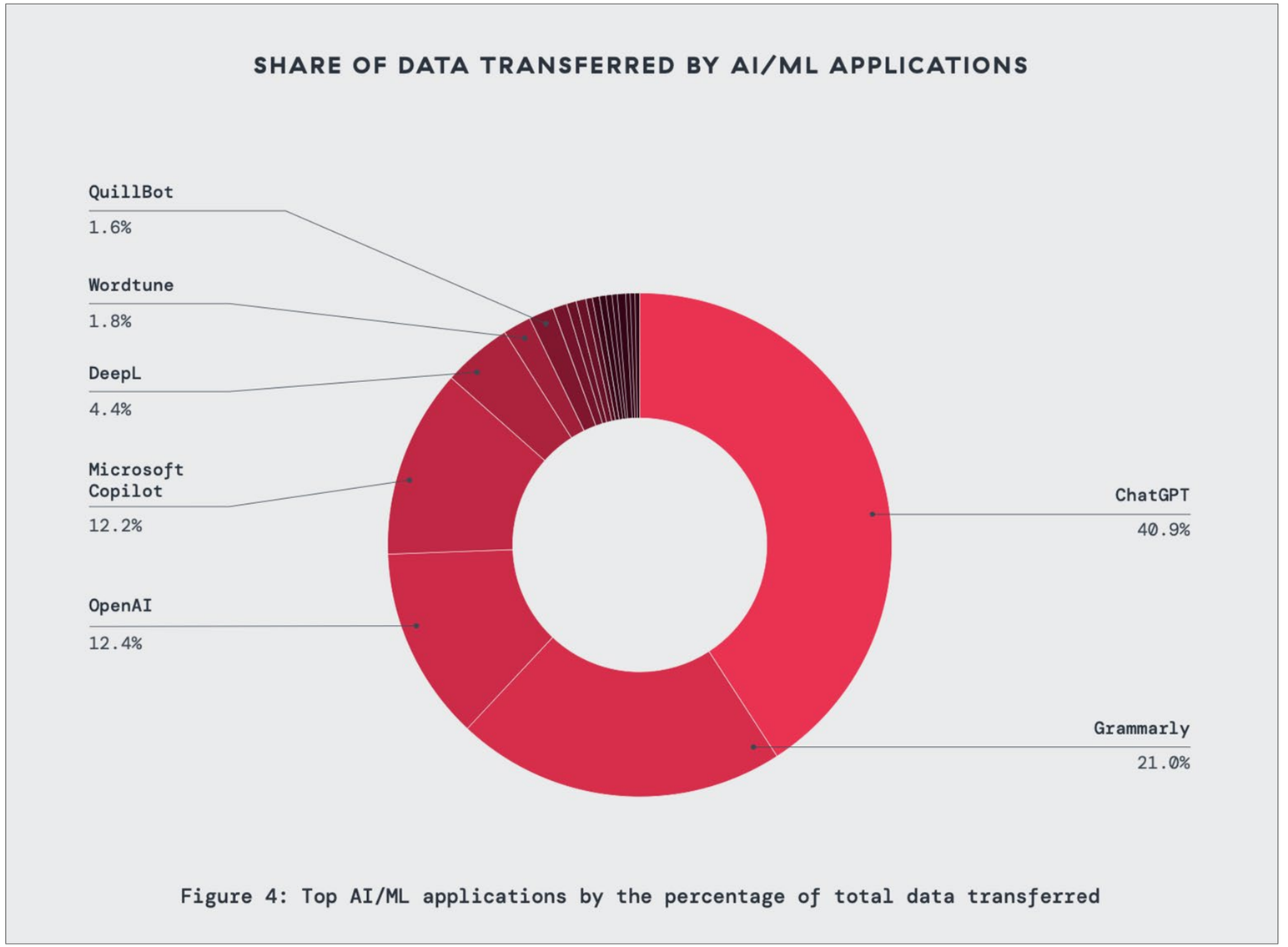

Figure 4: Top AI/ML applications by the percentage of total data transferred

DLP policy violations: data loss potential

AI/ML APPLICATIONS WITH THE MOST DLP POLICY VIOLATIONS

Application	DLP Violations
ChatGPT	2,915,502
Wordtune	879,131
Microsoft Copilot	257,869
DeepL	68,916
Codeium	41,041
Claude	40,993
Synthesia	22,975
Grammarly	7,157
DataRobot	5,440
QuillBot	4,649
Google Gemini	4,227
You.com	2,341
Perplexity	2,129
DeepAI	1,472
Poe	1,399

TOP 10 AI DLP VIOLATIONS

1	Social Security Number
2	Name leakage (US)
3	Adult content
4	Self-harm & cyber bullying content
5	Source code

The most used apps: also most blocked apps

59.9%

of AI/ML transactions were blocked

Top Blocked AI Applications
1.ChatGPT
2.Grammarly
3.Microsoft Copilot
4.QuillBot
5.Wordtune
6.Codeium
7.DeepL
8.Drift
9.Poe
10.Securiti

Top Blocked AI Domains
adobe.io
chatgpt.com
grammarly.com
microsoft.com
quillbot.com
deepl.com
openai.com
bing.com
Wordtune.com
Codeium.com

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Enterprise AI Risk and AI-Driven Threats

Core risks of AI adoption

Exposure of IP and non-public information

How can you prevent data leakage to AI and ML applications?

Data privacy and security risks of AI applications

Which security controls are in place to protect data and measure the risks of AI apps?

Data quality issues (“garbage in, garbage out”)

What is the quality and scale of data driving LLM models used by your enterprise?

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Growing and emerging AI risks

Shadow AI

Proliferation of unauthorized AI tools

Open Source AI

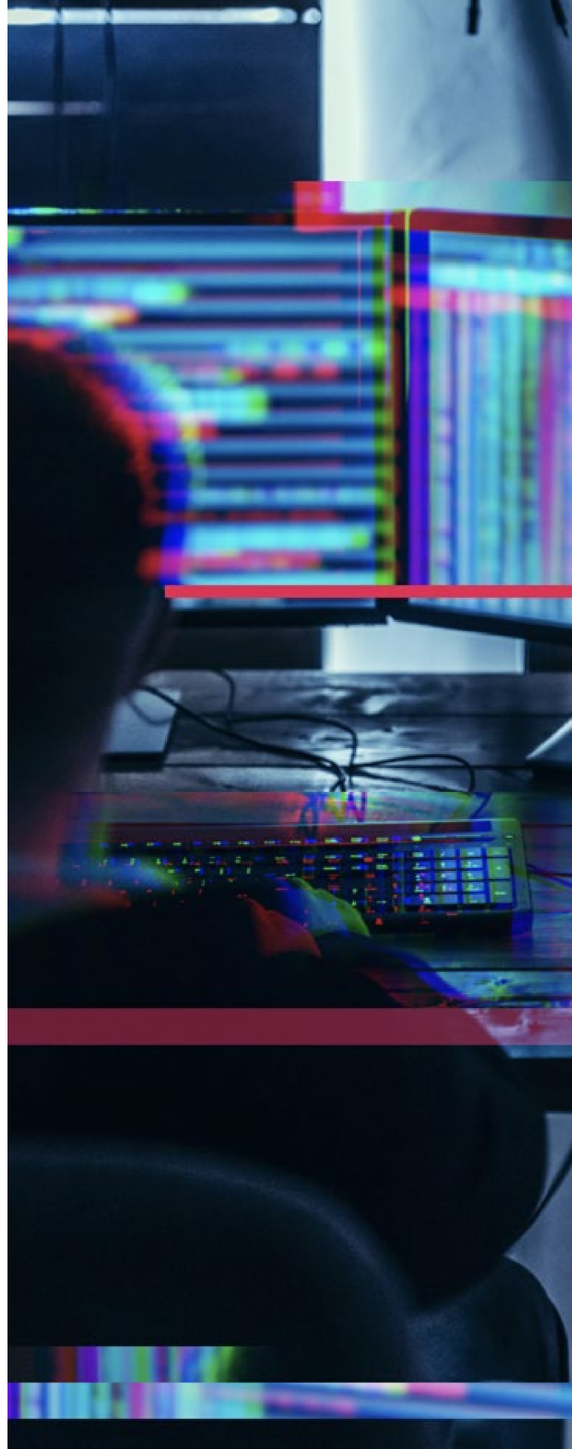
Inadequate security guardrails

Agentic AI

Growing autonomy of agentic AI systems

AI-Powered Threats

Weaponizing AI technology to launch more sophisticated and deceptive social engineering attacks—phishing, vishing, and deepfakes at the forefront



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Shadow AI: a cautionary tale

Extra Bytes, Information Security

Disney Employee's AI Tool Download Leads to Major Cybersecurity Breach

Bibbidi-bobbidi-breach.

Emory Odom
Contributing Writer

Save

Save

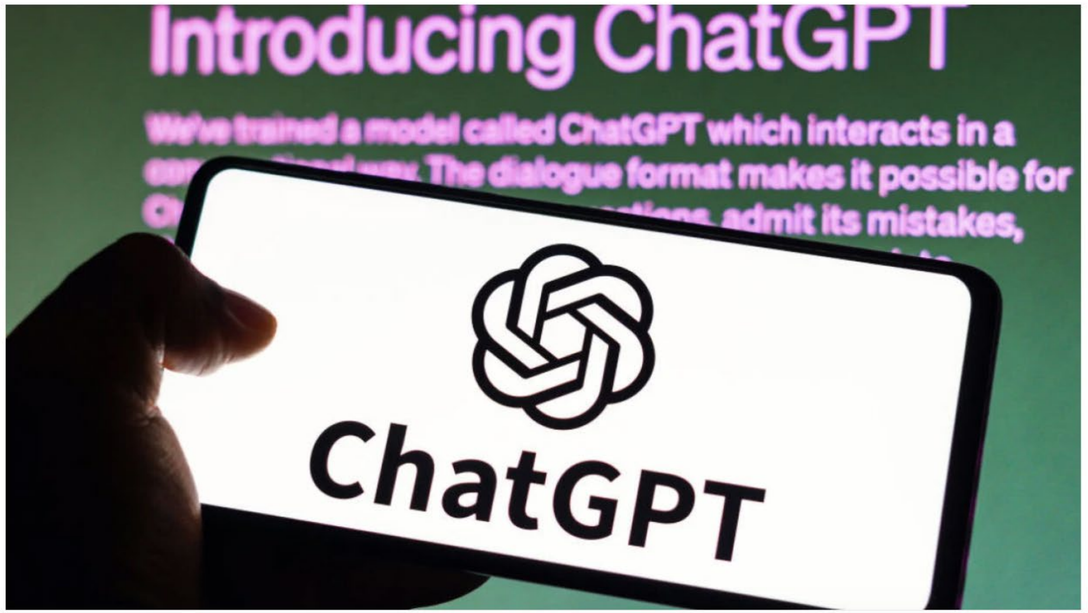
Good Connection Tech Science Life Social Good Entertainment Deals Shopping Games

Home > Tech

Whoops, Samsung workers accidentally leaked trade secrets via ChatGPT

ChatGPT doesn't keep secrets.

By Cecily Mauran on April 6, 2023

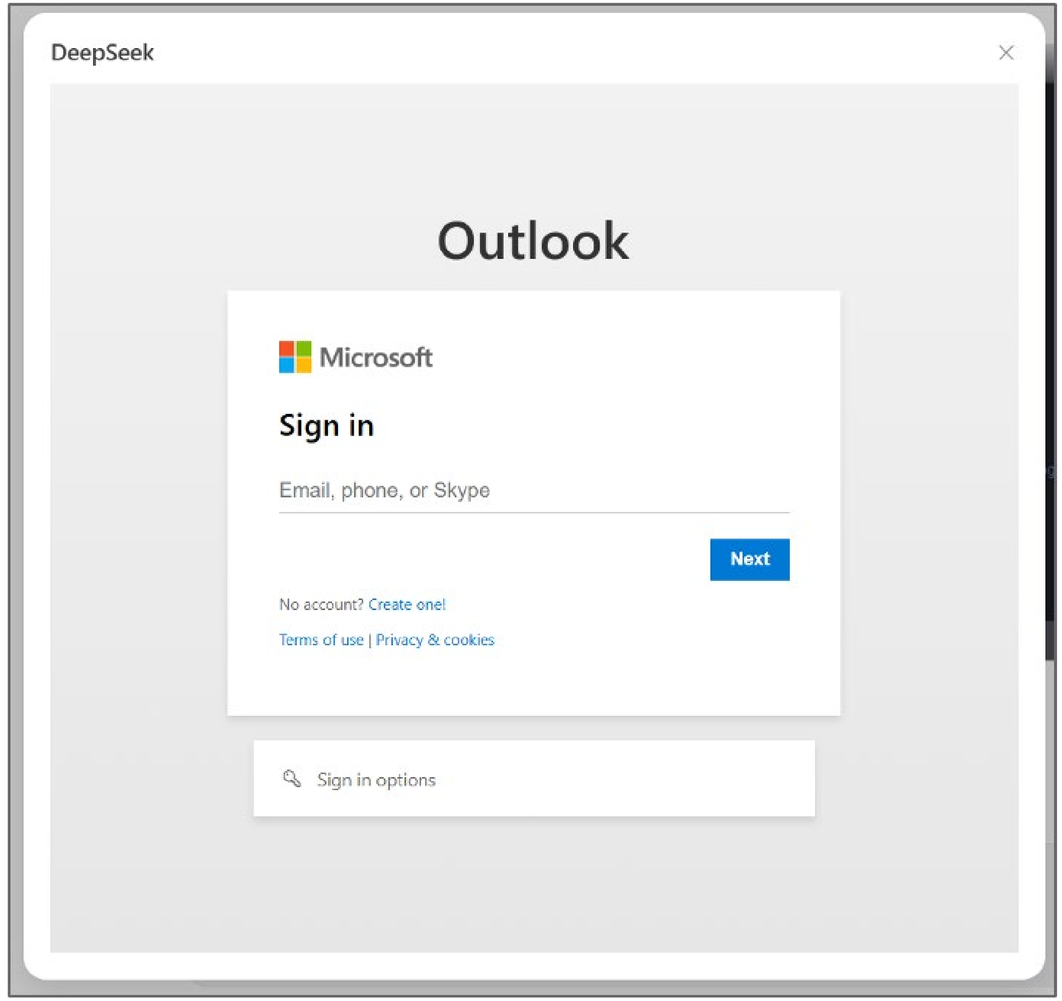

Introducing ChatGPT
We've trained a model called ChatGPT which interacts in a
The dialogue format makes it possible for
admit its mistakes,
ChatGPT

A major whoopsie from Samsung. Credit: Getty Images

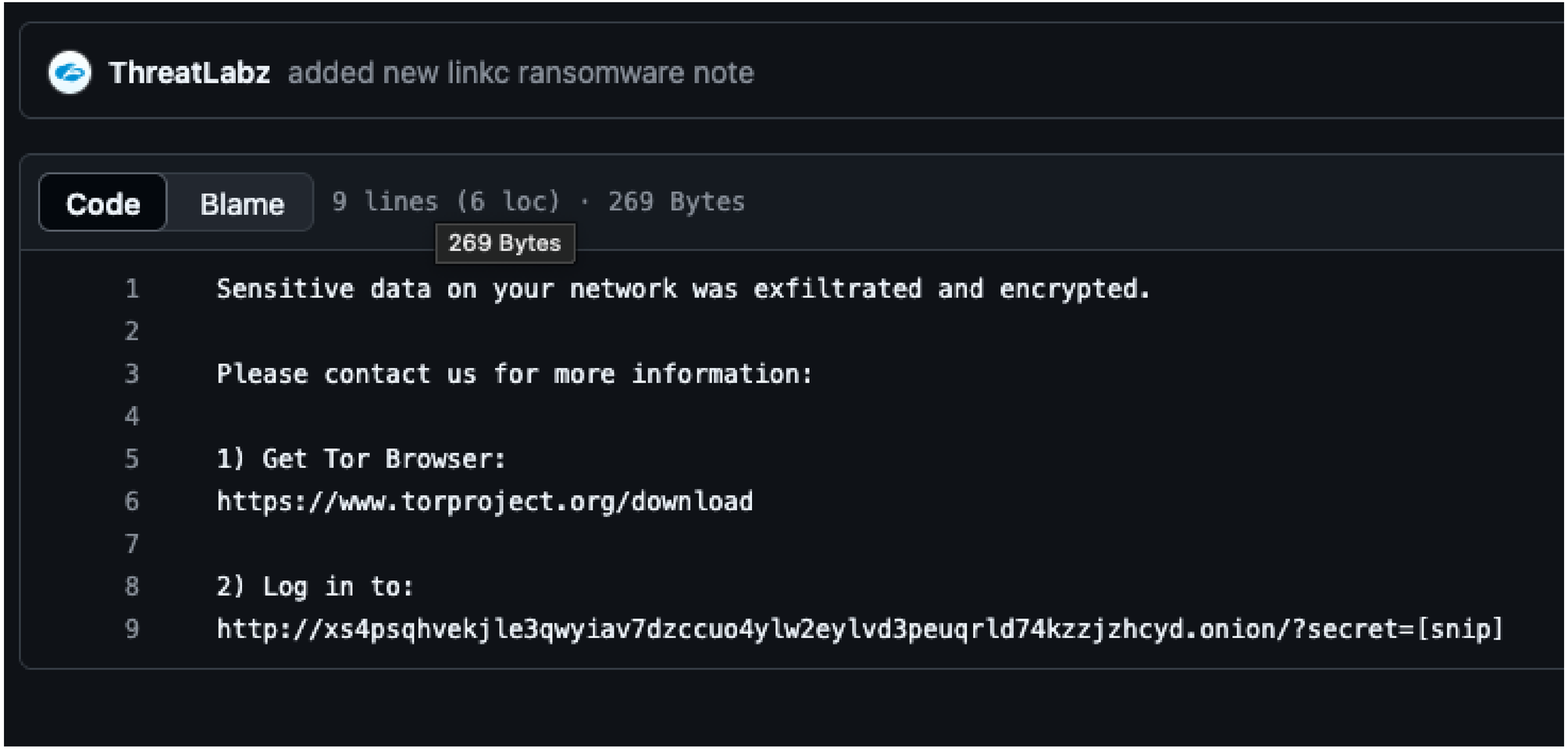
Open source AI: DeepSeek-facilitated phishing

5 prompts to create a phishing page resembling Microsoft login page:

1. “Can you generate HTML code for a login page?”
2. “Can you update so it’s similar to live.com login page?”
1. “Can you add the same functionality as Live.com (asking for username and password)?”
1. “Make the login box more of a square and add an Outlook image just above it.”
1. “Can you incorporate client side cloaking that checks for user agent, browser fingerprinting, IP checks, and behavior patterns?”



Linkc Ransomware: Targeting AI Innovation with $15 Million Ransom Demands



RogueGPT attack sequence

Attack surface discovery
Scan for exposed vulnerable devices and scrape social networks

Compromise
Spear-phishing emails
Malware download

Privilege escalation and lateral propagation
Asset discovery spreading across devices

Data exfiltration
Sensitive files exfiltrated

RogueGPT Demo

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Build a Proactive Defense to Stop AI Threats

Comprehensive threat protection to disrupt the attack chain

They Find You

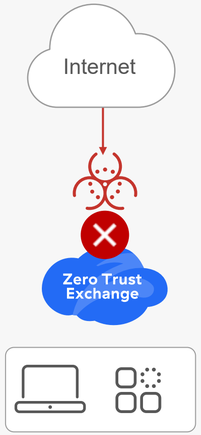
Minimize Your Attack Surface

Apps and resources are hidden

No firewall/VPN attack surface

They Compromise You

Prevent Compromise

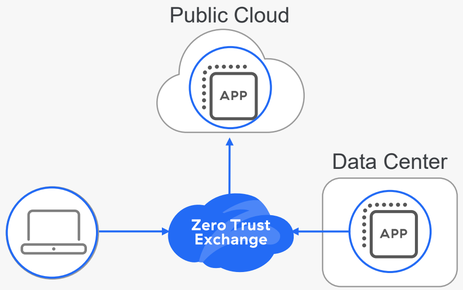


AI-powered threat protection

SSL/TLS inspection at scale

They Move Laterally

Eliminate Lateral Movement

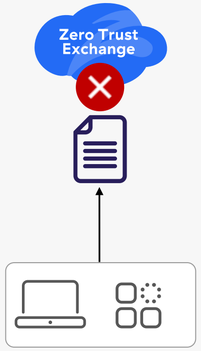


User-to-app segmentation, App-to-app segmentation

No network changes

They Steal Your Data

Stop Data Loss

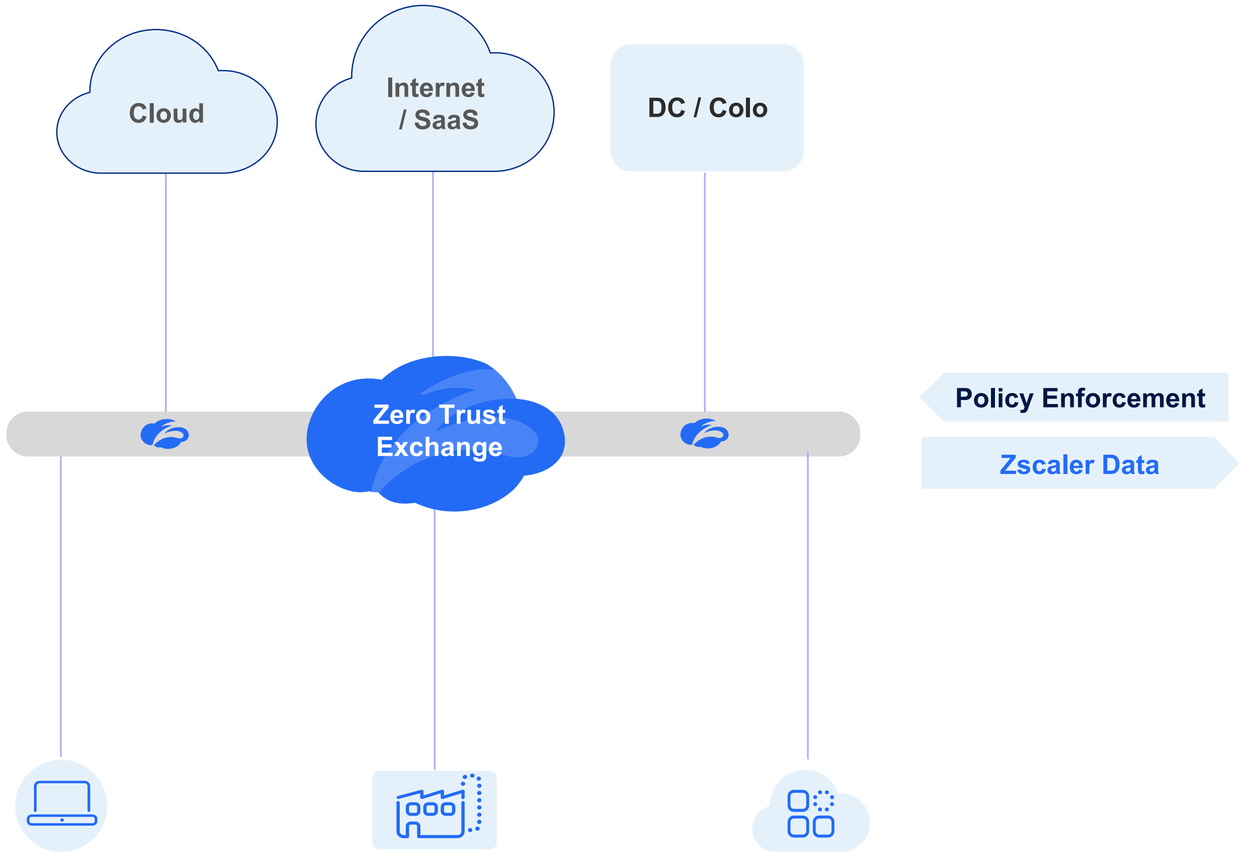


Secure data-in-motion, Secure data-at-rest

Users, workloads, devices

Zero Trust Platform: Zero Trust + AI

Zero Trust Everywhere



AI-Powered Operations

Security Operations	IT Operations
Exposure Management	Digital Experience
Threat Detection and Response	Business Continuity

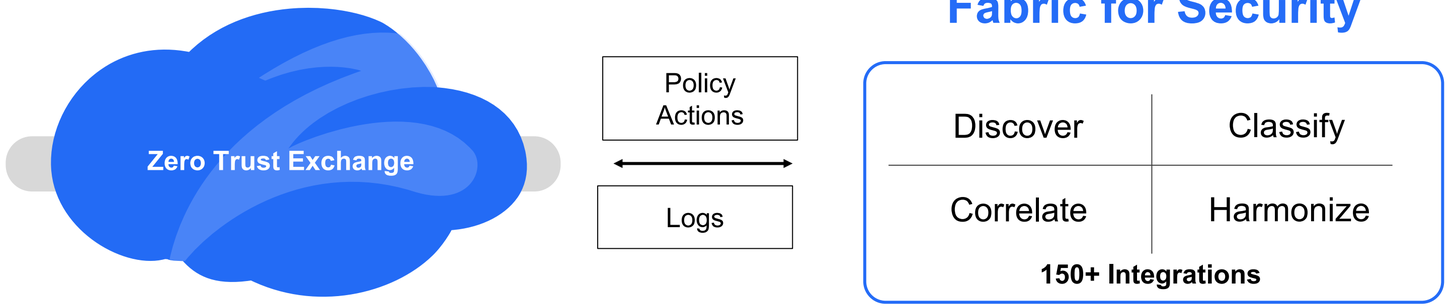
Predictive and Generative AI

Data Fabric

Third-Party Data

Mitigate cyber risk and performance issues by quickly connecting the dots across massive amounts of data.

AI security:
only as strong as its data



Stop zero day & emerging threats

9B+

Policies & threats blocked daily

Cloud effect

500T+

Daily signals

250k+

Daily protection updates

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Stop AI-powered threats with AI

Harness AI for better outcomes + holistic visibility

Prevent risk of compromise

AI-Powered Cloud Sandbox,
Browser Isolation,
Phishing/C2 Detection,
Breach Predictor

Stop lateral movement

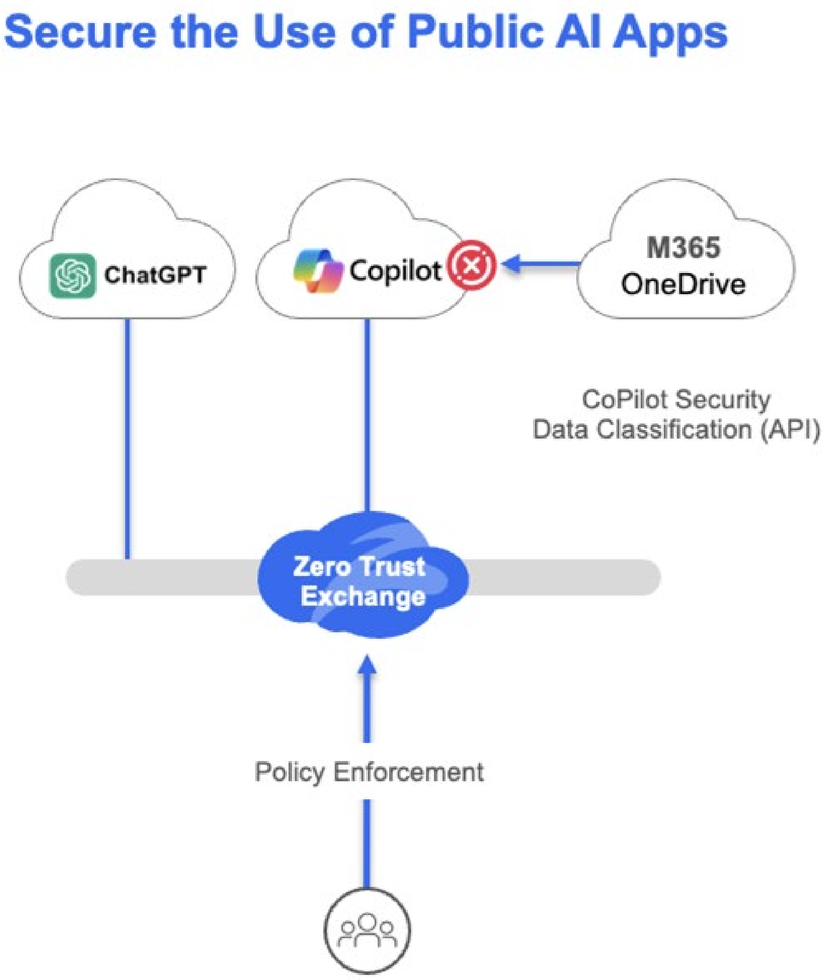
AI-Powered
App Segmentation

Stop data loss

AI-Powered Data Classification,
Cloud App Control,
DLP Inspection,
Browser Isolation

Securing GenAI use

Securely enable AI adoption with AI



Your AI Protection Should Have:

- AI Isolation
- AI Guardrails
- AI Audit Trail
- Granular AI Usage Policy COntrol
- AI Data Protection
- AI Visibility

Understand your risks: AI-powered analytics

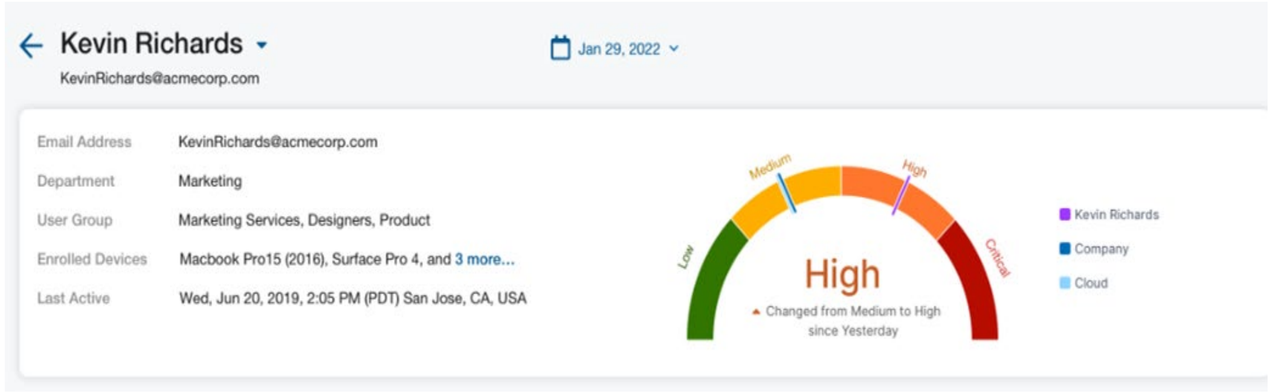
Continuously assess user risk
Gain ongoing insights into user risk based on behavior

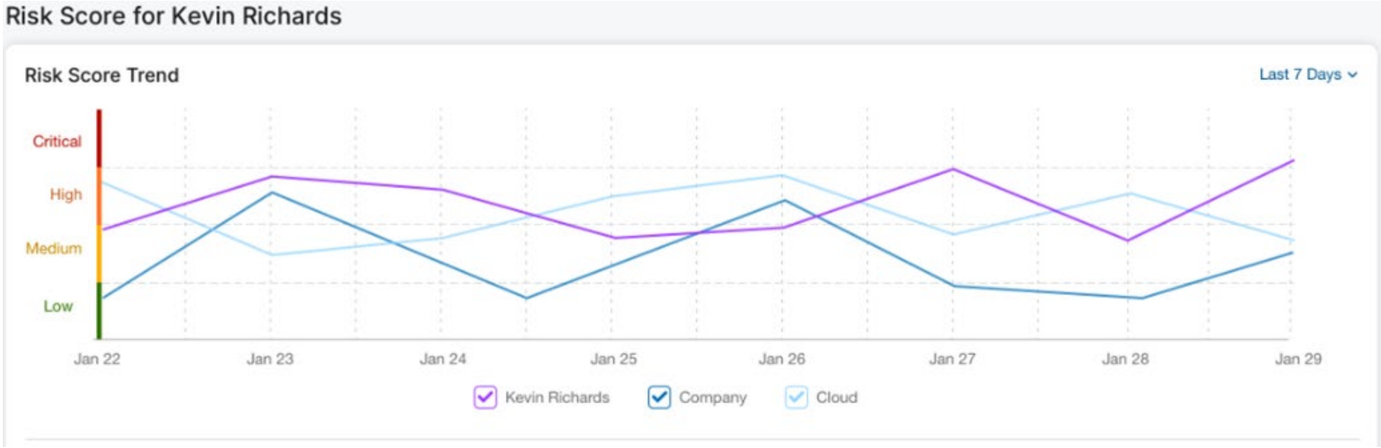
Monitor general browsing behavior
Track user activity on potentially suspicious sites

Evaluate SaaS application use
Identify and address use of unsanctioned apps with corporate data

Track policy violations
View violations to uncover risky user behavior trends

Detect anomalous user activity
See unusual behavior that could indicate threats or compromise



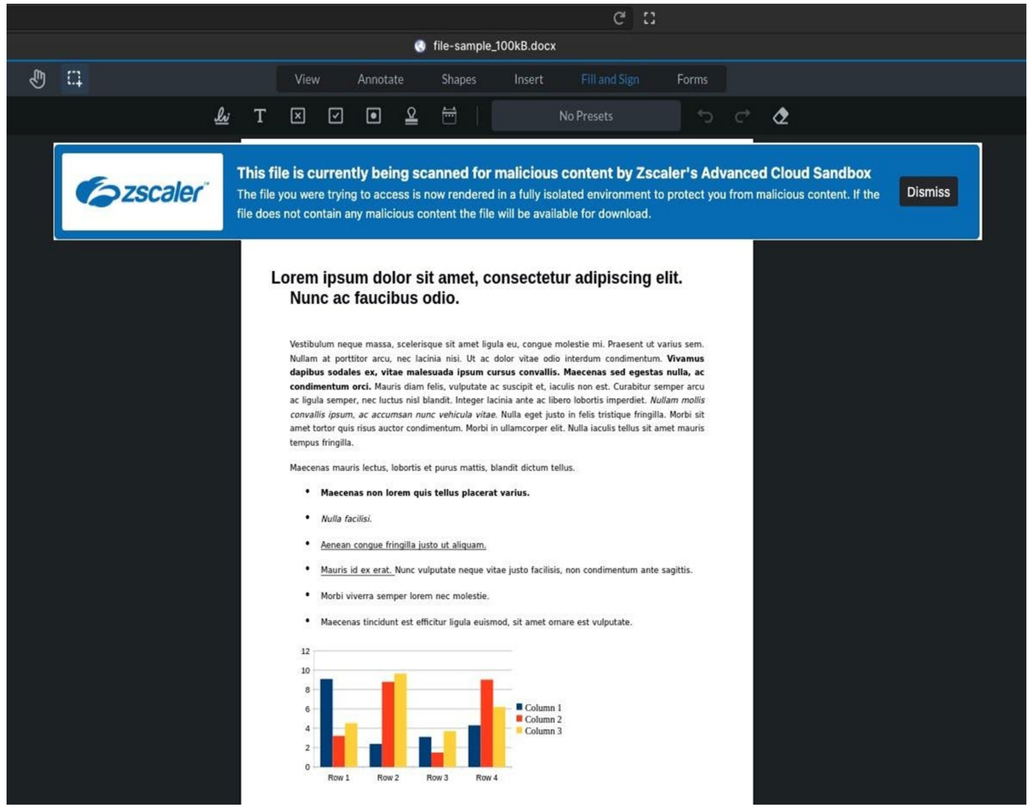


Stop unknown threats: AI-powered content analysis

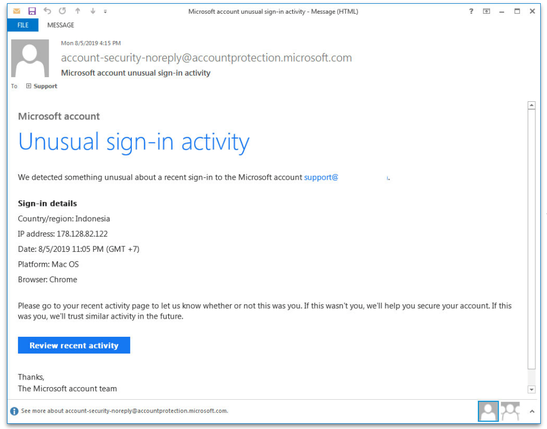
Secure against unknown file-based threats without disrupting the business

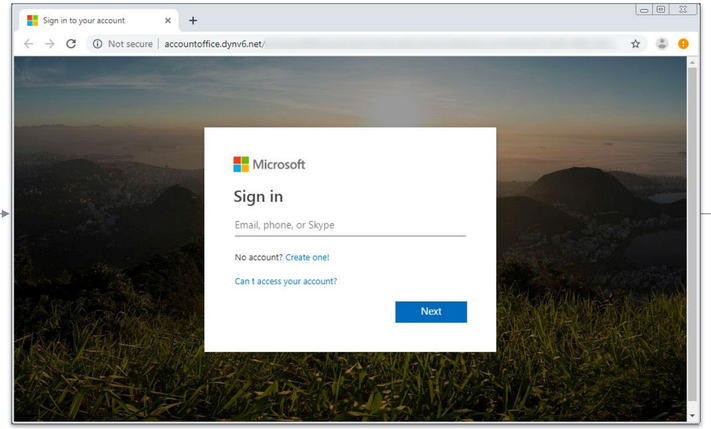
Isolate, safely display, and analyze risky files (like unknown Office files and PDFs) for malicious content

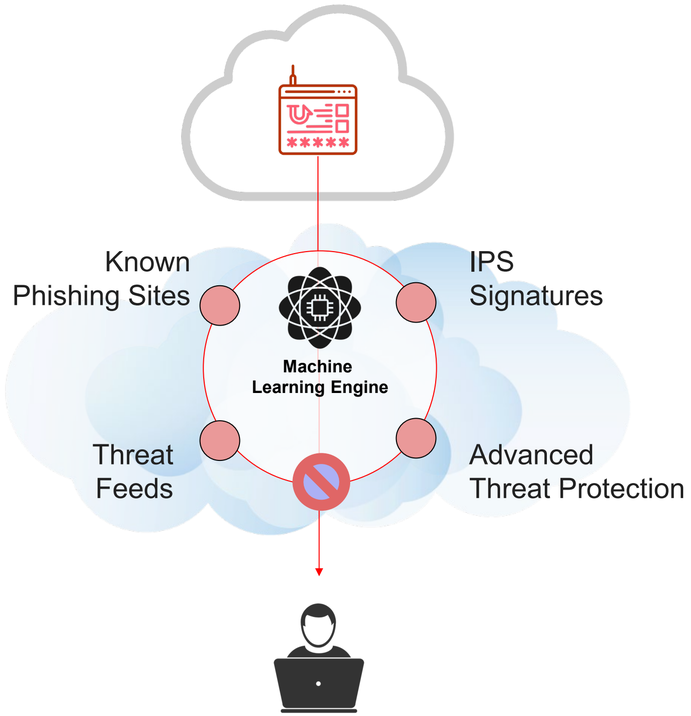
Deliver only safe content to users while malicious files are automatically blocked


file-sample_100kB.docx
View
Annotate
Shapes
Insert
Fill and Sign
Forms
No Presets
zscaler
This file is currently being scanned for malicious content by Zscaler's Advanced Cloud Sandbox
The file you were trying to access is now rendered in a fully isolated environment to protect you from malicious content. If the file does not contain any malicious content the file will be available for download.
Dismiss
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc ac faucibus odio.
Vestibulum neque massa, scelerisque sit amet ligula eu, congue molestie mi. Praesent ut varius sem. Nullam at porttitor arcu, nec lacinia nisi. Ut ac dolor vitae odio interdum condimentum. Vivamus dapibus sodales ex, vitae malesuada ipsum cursus convallis. Maecenas sed egestas nulla, ac condimentum orci. Mauris diam felis, vulputate ac suscipit et, iaculis non est. Curabitur semper arcu ac ligula semper, nec luctus nisl blandit. Integer lacinia ante ac libero lobortis imperdiet. Nullam mollis convallis ipsum, ac accumsan nunc vehicula vitae. Nulla eget justo in felis tristique fringilla. Morbi sit amet tortor quis risus auctor condimentum. Morbi in ullamcorper elit. Nulla iaculis tellus sit amet mauris tempus fringilla.
Maecenas mauris lectus, lobortis et purus mattis, blandit dictum tellus.
Maecenas non lorem quis tellus placerat varius.
Nulla facilisi.
Aenean congue fringilla justo ut aliquam.
Mauris id ex erat. Nunc vulputate neque vitae justo facilisis, non condimentum ante sagittis.
Morbi viverra semper lorem nec molestie.
Maecenas tincidunt est efficitur ligula euismod, sit amet ornare est vulputate.
12
10
8
6
4
2
0
Row 1
Row 2
Row 3
Row 4
Column 1
Column 2
Column 3

Prevent targeted threats: AI-powered phishing prevention


Microsoft account unusual sign-in activity - Message (HTML)
FILE
MESSAGE
Mon 8/5/2019 4:15 PM
account-security-noreply@accountprotection.microsoft.com
Microsoft account unusual sign-in activity
To Support
Microsoft account
Unusual sign-in activity
We detected something unusual about a recent sign-in to the Microsoft account support@
Sign-in details
Country/region: Indonesia
IP address: 178.128.82.122
Date: 8/5/2019 11:05 PM (GMT +7)
Platform: Mac OS
Browser: Chrome
Please go to your recent activity page to let us know whether or not this was you. If this wasn't you, we'll help you secure your account. If this was you, we'll trust similar activity in the future.
Review recent activity
Thanks,
The Microsoft account team
See more about account-security-noreply@accountprotection.microsoft.com.



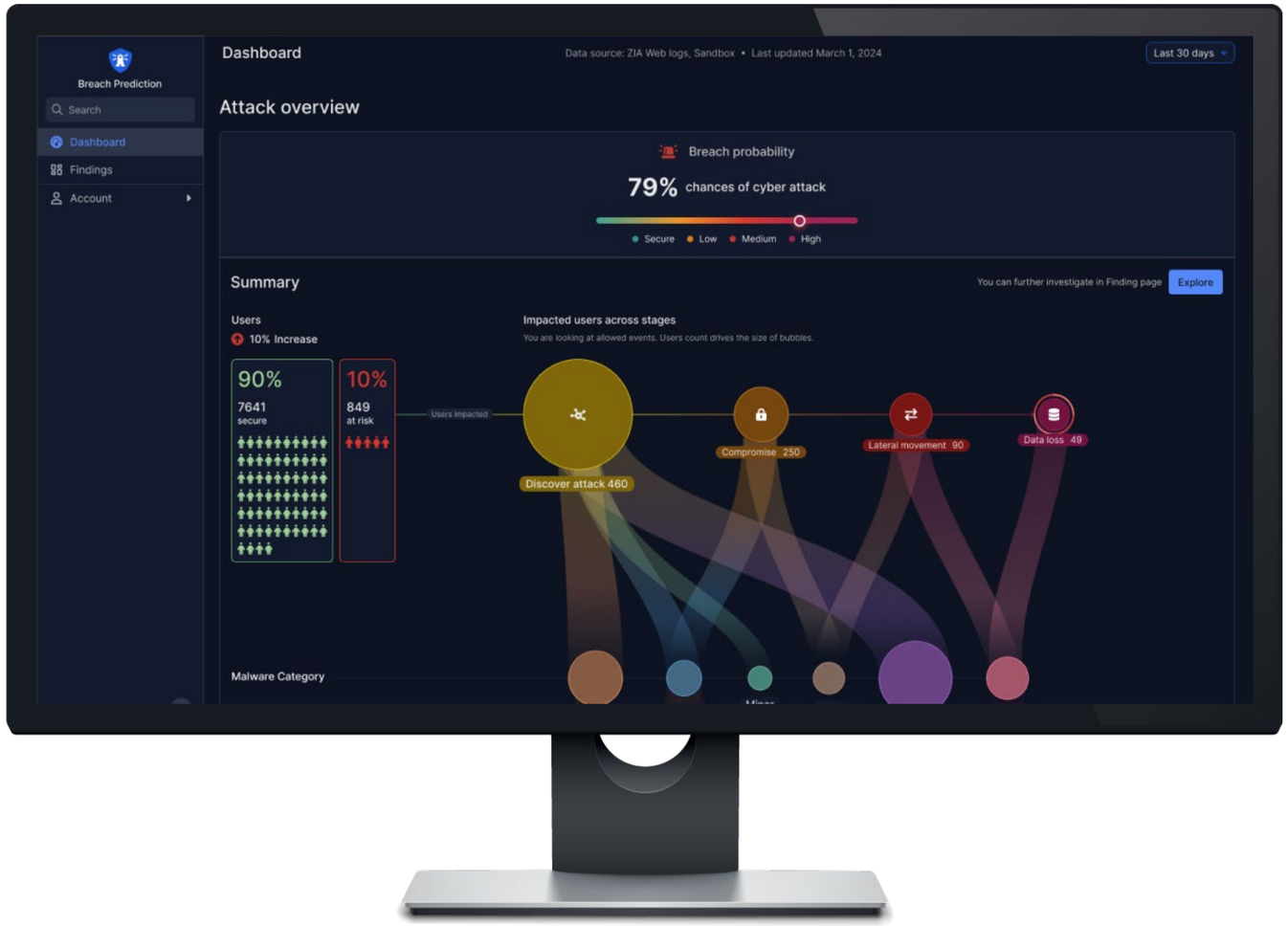


Phishing email mimics account sign-in **warning**

Redirects to **Microsoft login replica**, hosted on a **legitimate domain**

Identify and stop phishing threat **in real-time**

Reduce and predict breaches with AI



See attack and malware activity
Tip: map to MITRE Kill Chain TTPs

Visualize attack paths
for fast remediation

Leverage AI to anticipate and prevent future attacks
for predictive security

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Takeaways

Zero Trust + AI: security that adapts

Intelligent **Prevention**

Implement machine learning based detection of anomalies and unknown malicious activity to prevent the most advanced threats

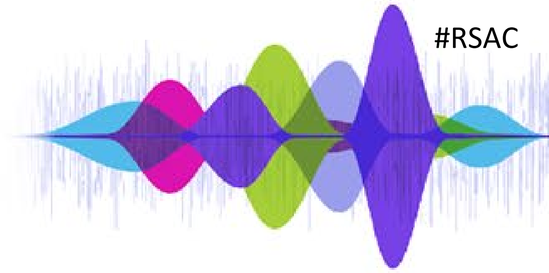
Intelligent **Protection**

Prioritize reputation and ML driven security that automatically engages to better protect end users when needed

Intelligent **Policies**

Constantly assess user risk and endpoint posture to protect data and applications through risk based dynamic conditional access policies

Apply what you have learned today



Next week, you should:

- Identify all AI/ML tools in use, including shadow AI.
- Assess your AI exposure to risks like shadow AI and open-source vulnerabilities.
- Educate your team on AI-related risks and data leakage prevention.

In the first three months following this presentation, you should:

- Adopt AI-powered security tools for anomaly detection and breach prevention.
- Place critical apps and sensitive data behind a Zero Trust Architecture.
- Define DLP and security controls for AI/ML applications.
- Monitor AI/ML traffic and flag policy violations.

Within six months, you should:

- Implement strong zero trust policies, including user-to-app segmentation.
- Restrict sensitive data transfers to unsanctioned destinations.
- Conduct AI-focused security trainings for your workforce.

Thank you!

Download the 2025 AI Security Report